

UNITED STATES GOVERNMENT

Memorandum

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MM

TO : Refuge Manager, Medicine Lake NWR
Medicine Lake, Montana

FROM : Assistant Regional Refuge Supervisor
BSF&W, Portland, Oregon

SUBJECT: Annual Water Programs

DATE: March 11, 1970

Subject Plans for Medicine Lake and Lamesteer are herewith approved.

A copy of the Acting Regional Engineer's approval is attached for your information.

Crayton J. Lankford
Crayton J. Lankford

Attachments

1970



UNITED STATES GOVERNMENT

Memorandum

TO : Regional Refuge Supervisor

FROM : Acting Regional Engineer

SUBJECT: 1969 and 1970 Annual Water Program for Medicine Lake NWR

.....Supervisor
.....Associate
.....Asst. Mont-Id
.....Asst. Wash-Or
.....Asst. Cal-Nev
.....Reg. Biol
.....Planner
.....Wilderness
.....Recreation
.....Mgt. Asst.
.....Secretary

DATE: March 9, 1970

The 1969 and 1970 Annual Water Programs for Medicine Lake-Lamesteer Refuges have been reviewed and found satisfactory from an Engineering standpoint.

It is suggested that in the 1971 Report, the Sheep Creek filing recorded in 1969 be included and also water well uses and rights.

William M. Striplin, Jr.
William M. Striplin, Jr.

Enclosures



5010-108

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

MEDICINE LAKE NATIONAL WILDLIFE REFUGE

MEDICINE LAKE, MONTANA

ANNUAL WATER PROGRAM - 1970

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

MEDICINE LAKE NATIONAL WILDLIFE REFUGE
MEDICINE LAKE, MONTANA

ANNUAL WATER PROGRAM - 1970

I. Record of 1969 Water Use

A. Source of Supply

Run-off water from melting snows in early April, 1969 provided the major water supply for the refuge impoundments. Heavy rains in late June and early July caused all refuge drainages (except Lost Creek) to start flowing again for from one to three weeks.

Big Muddy Creek provided ample water for both Medicine Lake and Homestead Lake. Sheep Creek and Lost Creek also ran bank full into Homestead Lake.

Lake Creek, Cottonwood Creek and Sand Creek quickly filled up No. 12 Lake, No. 11 Lake, Katy's Lake, No. 10 Lake and Gaffney Lake. The excess water then spilled over 9F spillway into Medicine Lake proper.

B. Type of Rights

The Bureau of Sport Fisheries and Wildlife through filings posted and recorded in 1936 and 1937 holds Appropriative Water Rights on five drainages. These rights are summarized as follows:

Water Rights Filing No.	Source	Amount of Water Right C.F.S.	Acres under Water Right
233163	Cottonwood Creek	100	3,640
233164	Sand Creek	75	3,640
233165	Lost Creek	25	840
233166	Sheep Creek	20	750
233167	Lake Creek	100	3,640
233168	Big Muddy	50	1,600 Homestead Lake
233169	Big Muddy	1,200	2,000 Medicine Lake

Refuge water use records extend back to June 1936.

C. Purpose of Use

All appropriated waters were used for irrigation of lakes and marshes to produce wildlife food, habitat, disease control and storage of water to satisfy late season water needs.

D. Season of Use

The main season of water use is from late March until early December each year. The water impoundments are frozen over from early December through

March each year. The attached Annual Summary of Water Use form shows period of appropriation.

E. Quantity Used

A total of 125,957 acre feet of water entered the refuge in 1969. All impoundments were from one to two feet above maximum operational levels during the month of April. Of the previously mentioned 125,957 acre feet, 45,136 A.F. were retained in the refuge and 80,821 A.F. were released out of the refuge as excess to our needs.

F. Place of Use

The Annual Summary of Water Use form shows the general location and gives reference to the legal description of the place of use for all waters appropriated during 1969.

G. Adequacy of Supply

As mentioned previously (in item E.) there was a total of 125,957 acre feet of water entered the refuge this year. Of this total 45,136 A.F. was retained in refuge impoundments and 80,821 A. F. released out of the refuge as excess.

The water level in all impoundments throughout April and early May was over the approved elevation from one to two feet. Much flood damage occurred to dikes, roads and canals from the flood waters. All of the flood damage has been repaired with the exception of the Medicine Lake inlet canal which will need many eroded areas riprapped with heavy rock.

All impoundments were near the maximum operational level when freeze-up came in late November. Homestead Lake was an exception, it had to be lowered for island repair and bulrush control this winter.

The following chart lists the monthly levels in all units during the 1969 season.

MONTHLY RECORD OF GAUGE READINGS - 1969

IMPOUNDMENT	No. 4*	No. 6*	Unit No. 10	Unit No. 11	Unit No. 12	Katy's Lake
PRESENT OPIR. LEVEL	1943.00	1937.65	1945.00	1951.54	1954.00	1954.00
January	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen
February	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen
March	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen
April	1944.96	Over gauge	1946.93	1952.36	1956.50	1954.30
May	1943.12	1937.80	1946.93	1950.92	1955.36	1954.84
June	1942.60	1937.16	1946.35	1951.32	1953.60	1954.56
July	1943.08	1937.44	1946.17	1951.82	1954.02	1954.88
August	1942.56	-----	1944.43	1951.46	1953.80	-----
September	1941.74	1936.30	1943.73	1950.94	1953.18	1954.00
October	-----	1936.20	1943.73	1951.02	1953.32	1954.00
November	1942.60	Below gauge	1943.73	1951.04	1953.40	1954.00
December	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen

All gauge readings as of the middle of each month.

*No. 4 - Medicine Lake

*No. 6 - Homestead Lake

Given in the following chart are deficiencies in unit water levels at freeze-up time during the 1964-1969 period.

DEFICIENCY IN ACRE FEET AS OF DECEMBER 1

IMPOUNDMENT	1964	1965	1966	1967	1968	1969
Medicine Lake	17,000	12,230	*24,800	*13,000	16,700	4,000
Homestead Lake	1,800	2,400	* 2,600	* 3,600	8,000	*6,000
Kaggy's Lake	600	140	242	678	300	** 0
No. 10 Lake	1,900	860	1,526	1,600	1,800	800
No. 11 Lake	400	426	440	380	500	100
No. 12 Lake	1,000	231	1,080	500	300	** 0
	22,600	16,287	30,688	19,758	27,600	11,000

* Water released for disease control or marsh management.
 ** No deficiency, at operational level.

II. Recommendations for 1970.

We will need approximately 11,000 or more acre feet of water to bring all impoundments up to operational level in the spring of 1970. The average spring run-off produces 25,000 acre feet of water. Any shortage would be mainly in Medicine Lake proper and would not be critical.

The following recommendations are offered for water management on Medicine Lake Refuge during 1970.

1. Current approved operational levels will be continued for 1970.
2. Impoundments will be filled as early in the spring as possible.
3. Homestead Lake has a tendency toward botulism. Often in the late summer the lake must be drawn down about one foot. This will draw the water out of the dense stands of emergent vegetation and thus relieve conditions that aid the growth of botulism. Therefore, we recommend the drawdown of Homestead Lake when necessary to combat botulism.
4. Water in excess of what is needed to obtain approved operational levels will be diverted to the next downstream impoundment. Excess water in Homestead Lake or Medicine Lake will be released back out into Muddy Creek.
5. The earthen dam placed across Sheep Creek by Alvin Erdahl of Froid, Montana should be checked in the spring of 1970. This would be to see how this dam is influencing our water supply. This dam of Erdahl's has been discussed in prior correspondence with the Regional Office.

6. Proposed Water Use Priority

<u>Unit</u>	<u>Purpose</u>	<u>Priority</u>
Katy's Lake	Nesting and Rearing	1
No. 10 Lake	Nesting and Rearing	2
No. 11 Lake	Nesting and Rearing	1
No. 12 Lake	Nesting and Rearing	1
Gaffney Lake	Storage, Nesting and Rearing	2
Medicine Lake	Storage, Nesting and Rearing	2
Homestead Lake	Nesting and Rearing	1

LAMESTEER NATIONAL WILDLIFE REFUGE
WIBAUX, MONTANA

ANNUAL WATER PROGRAM - 1970

1. Source of Supply

Spring run-off water entering the reservoir via Lamesteer Creek is the entire source of water for the Lamesteer Reservoir.

2. Type of Rights

A "Notice of Appropriation of Water" claiming 427 acre feet of water of Lamesteer Creek was posted on June 30, 1938, over the signature of Wilbert A. Rodgers, Administrative Assistant, Bureau of Biological Survey, as authorized agent for the Secretary of Agriculture. The fact of posting was recorded in Book 6 of Miscellaneous on page 345 in the Wibaux County Recorder's Office, Wibaux, Montana, on July 16, 1938.

3. Purpose of Use

During the 1969 season all appropriated waters were used for flood control, water conservation, propagation and feeding of waterfowl, and for irrigation as called for in the "Notice of Appropriation of Water".

4. Season of Use

Water usage on the refuge is on a yearlong basis with the heaviest demands being made during the ice free period of March through November when evaporation and transpiration rates are the greatest.

5. Quantity Used

The major water supply was derived from melting snow in April 1969. Our first visit to Lamesteer Refuge was in April and water was running over the spillway. Additional water was obtained from the heavy rains in July. The last visit to Lamesteer was November 7 when the water was 15 inches below crest.

6. Place of Use

All appropriated waters were used within the boundaries of the SE $\frac{1}{4}$ of Section 14 and all of Sec. 15, T12N, R60E of Montana Principal Meridian, Wibaux County, Montana.

7. Adequacy of Supply

The water supply for Lamesteer reservoir was excellent this year. We have no way of knowing the acre feet of water that passed over the spillway, but estimate it was a substantial amount.

8. Recommendations for 1970

Actually the Lamesteer spillway is nonadjustable and the water is impounded up to crest elevation and then spills over the structure. During very high run-off periods water will go around the emergency spillway on the south side. Our main recommendation is to hold all water to crest operational level for wildlife use.

There is evidence of an estimated 15 acres being put into irrigated cropland just south of the Lamesteer dam. This would bear watching in 1970. The owner of the land, Mr. Wallace Scott, can pump out of the overflow only. The Bureau has water rights on water in the impoundment. Any sign of pumping directly from the reservoir will be reported to the Regional Office.

Submitted: Donald M. White

Date: Dec. 19, 1969

Approved: _____

Date: _____